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THE BIRDS
OF BRITISH COLUMBIA

(1) The Woodpeckers
(2) The Crows and Their Allies

Text by C. J. Guiguet
Illustrations by Frank L. Beebe

VICTORIA, B.C. OCTOBER, 1954

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VICTORIA, B.C.
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1954

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C. J. G.

F. L. B.

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The Woodpeckers

INTRODUCTION

The woodpeckers are a group of birds which have characteristics that set them apart from other birds occurring in this Province. While this is true of all families of birds, we find that in some groups the distinguishing characteristics are not so apparent as they are in others. In the woodpeckers, however, they are easily seen, and can be listed numerically as follows: (1) Chisel-shaped bill, almost diamond-shaped in cross-section; (2) very stiff pointed

WOODPECKER CHARACTERISTICS

(1) Head of typical (hairy) woodpecker, showing the chisel-tipped beak. (2) Tail of hairy woodpecker; the stiff, springy, pointed feathers are used as a prop in climbing trees. (3) Foot of typical woodpecker. (4) Foot of three-toed woodpecker. (5) Brush-tipped tongue of sapsucker. (6) Spear-tipped tongue of typical woodpecker.

tail feathers; (3) two toes pointed forward and two back, instead of three ahead and one back as in most birds (one group, the three-toed woodpeckers, however, do have only three toes, two of which point forward); (4) toes armed with sharply recurved claws which are used in tree-climbing, which activity in itself is a characteristic of the family; (5) tongue capable of long extension and armed with barbs, upon which wood-boring grubs are impaled and retracted (in the sapsuckers, however, the end of the tongue is without barbs; it ends in a sort of brush with which the birds apparently lap up the sap—hence the name " sapsucker ").

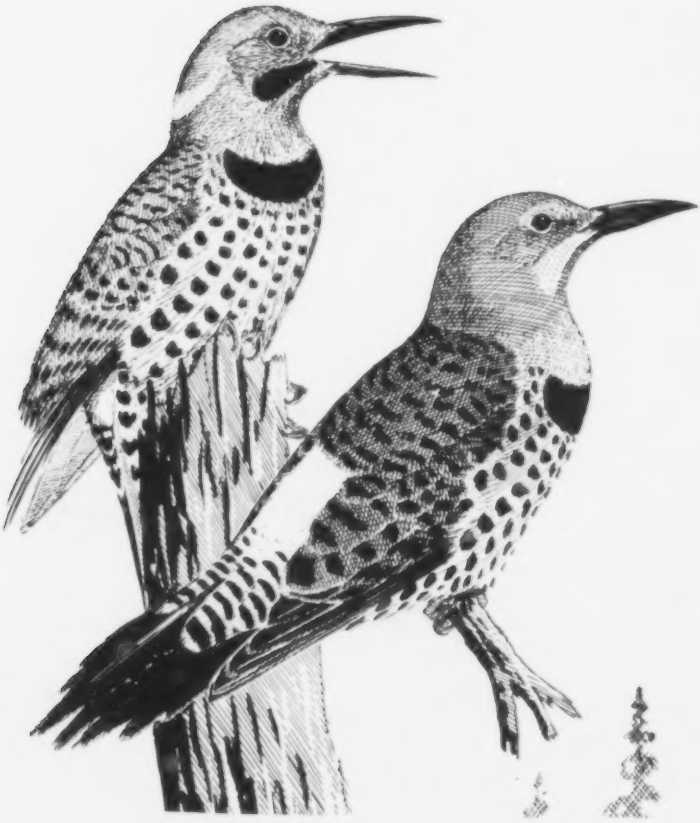
These are the physical attributes; behaviour traits also characteristic of the woodpeckers include peculiar undulating flight, the tree-climbing habit, bill-hammering, and the habit of excavating nesting-holes in which to raise the young.

As a group then, these birds are easily separated from all others. The species within the group are also easily identified as all are strongly marked in contrasting patterns.

THE FLICKERS

The flickers are the most widely distributed of our woodpeckers, being found in British Columbia wherever trees occur. Flickers range from timber-line to sea-level, preferring, it seems, open woodlands, burns, and slash rather than heavy coniferous forest. We find them also in our cities and towns, nesting sometimes in telephone-poles as well as in trees. Their habit of drilling holes in the gables of wooden houses has made them most unpopular with some householders not only because of the damage done, but also for the terrific din set up by their hammering bills—a din usually created in the very early dawning.

Thus these birds are well known even to city dwellers; the flashing colour of under-wing and tail, the white rump, the heavily spotted breast with a black crescent, plus the prominent moustache and red nape of the male, set them apart from other species to such an extent that even the small child cries " woodpecker " when he sees one. The voice, too, is familiar, the loud " flicka-flicka-flicka " notes having given the bird its name. It also has a long harsh song phonetically expressed " wick-wick, wick-wick,"



Yellow-shafted flicker.
Male.

Red-shafted flicker.
Male.

etc., and an inquiring sort of a call which has been expressed as " kew? " or " kee-yer? " (Peterson, 1941).

The flickers are home-builders for many species of trunk-nesting birds; small owls, sparrow-hawks, bluebirds, and the like nest habitually in abandoned woodpecker nesting-sites. Some of the arboreal mammals such as the red squirrel and the flying squirrel also take advantage of these excavations and raise their young where once a family of flickers was hatched.

The flicker lays from five to twelve dull white eggs that are produced after a very noisy and conspicuous mating procedure. The adult birds, sometimes four or five in a group, bow, bob, and chase each other around the tree-trunks uttering loud cries, while spreading tail and wing to display the rich colours on the underside. During this procedure they are easily approached, and it is not surprising that many are taken by raptorial birds.

In North America we have two species of flicker—the yellow-shafted and the red-shafted; these in turn have become differentiated into several subspecies, three of which occur in British Columbia; one of these is yellow-shafted, the other two are red-shafted. To confuse the picture further, the red-shafted and the yellow-shafted interbreed, so that we find intermediate-appearing birds throughout the range. Consequently, on the Coast we often see flickers showing the chrome yellow under-wing and tail, although the majority there show varying shades of orange through to red. The red-shafted male flicker has a red moustache, but we often find this speckled with black, indicating the presence of yellow-shafted blood, for the yellow-shafted male has a black moustache. The females of both species are without the facial mark termed " moustache " here. Both sexes in the yellow-shafted bird have a red mark at the back of the head, a feature normally lacking in the red-shafts; occasionally we do find such a mark, but whether it indicates hybridization or not is unknown.

The yellow-shafted flicker occurs in the Peace River parklands during the summer months and in the boreal forest biotic areas of the Province ~~throughout the year~~. It extends as far south as the Vanderhoof area and west down the Skeena to Terrace. In the western reaches there is a great deal of intergradation with the red-shafted birds.

The red-shafted birds occupy the southern half of the Province, with the two subspecies occurring on opposite sides of the Cascade Range.

During the winter months many of these coastal and Southern Interior birds remain, but the majority in the Interior move south or west to warmer climes.

THE PILEATED WOODPECKER

The pileated woodpecker is distributed from coast to coast, occurring in forest lands across the north central part of the continent and well south through the timbered areas of the east and west. Two of the four subspecies recognized occur in Canada. These are the northern pileated woodpecker, which occupies Eastern Canada and boreal forest areas north of the Great Plains, and the western pileated woodpecker, which occurs in Western Alberta, British Columbia, and southwards. These birds are so similar that it requires large series of skins to demonstrate differences which are said to lie mainly in size and colour, the western race being described as a slightly smaller and darker form.

Anyone familiar with the western bird will have no difficulty in identifying any of the four races which occur on the continent, for there is no feathered creature with which a pileated woodpecker can be confused. It is a large bird, about the size of a crow, smoky black in body colour. Both sexes carry a conspicuous red topknot, a startling white throat, and a prominent white line which begins at the base of the upper mandible. This line runs below the eye, broadens at the side of the head, and extends down the neck to join a large white patch on the under-side of the wing. The upper side of the wing is also marked with white, carrying a splash on the leading edge and a broad band through the centre, which shows *only* when in flight but is then very conspicuous, and this, with the typical undulating woodpecker flight, serves in positive identification even at great distance. The male birds carry a bright red moustache above the white throat, a feature lacking in the female; consequently, at close range or with field-glasses, it is easy to differentiate the sexes.

Pileated woodpecker.

Female. Male.

These birds are encountered most often in deep coniferous forests where intrusions of deciduous growth such as poplar occur. There they may be heard drumming on dead trees in search of insects, or busily drilling a nesting-hole. The drumming is slower than that of smaller species, but has a more powerful sound, which the observer can identify specifically with a little practice. The usual pileated call is loud and strident, somewhat reminiscent of the flicker, but with much more volume. It utters a loud " cac, cac, cac " as it flies and has also a variety of chuckles and cackles which are difficult to describe. When undisturbed these birds are usually silent, especially in the vicinity of the nest, and this characteristic, coupled with an apparent preference for cover, often leads to the impression that they are comparatively rare. This impression is not always correct, however, and while they are not as numerous as some species, they are by no means a rare bird in Western Canada, and particularly in British Columbia.

The pileated woodpecker feeds primarily upon insects and, in season, upon berries. During the fall and winter months it is often seen working over fruit-bearing trees, and we've even had reports of them eating cherries. As a rule, however, they eat the wild fruits.

THE LEWIS WOODPECKER

The Lewis woodpecker is the most curious, aberrant, and to most bird-lovers, the most interesting species in the woodpecker group. It is a large bird, about the size of a flicker; the top of the head, the back and tail are black, with a peculiar greenish metallic suffusion; the face is masked in red; a narrow greyish band encircles the neck, extending to and expanding on the undersides from chin to breast; the abdomen carries a peculiar blend of rose and greyish-pink feathers which have a hairy appearance.

These birds occur in the southern portions of the Province from the Rocky Mountains west to the Coast, with a centre of abundance in the vicinity of the Okanagan Valley. They occur regularly in small numbers as far north as Williams Lake, and there is also one record from the Queen Charlotte Islands and one from Takla Lake. On the Southern Coast they occur the year round, though again in small numbers. A pair nests annually near

Lewis woodpecker.

Jack Lake on the Victoria watershed, and we have recorded them during the winter months at William Head, Victoria, and Esquimalt. During mild winters they sometimes remain in the Southern Interior. As a rule, however, they are migratory; in the fall the family groups often band up into large flocks and move southwards to California, where they are said to raise havoc with berry and other fruit crops.

In feeding habits, Lewis woodpeckers differ markedly from other species. They frequent open country, such as old burns, and parkland areas where groves of trees are widely separated. From their perch high on some isolated snag, they sail forth to take insects on the wing, much as the flycatchers do. They have been observed working back and forth over a "hatch" of insects in company with large numbers of swallows—a most unwoodpecker-like habit. Their fruit-eating habit has made them most unpopular with southern fruit-growers, and in Oregon and California they have been known to attack even boxed apples stacked in the orchards awaiting shipment. During the winter months these birds husk and store acorns in the cracks of trees, and during a short "hatch" of flying insects they have been known to store their catch in the same manner.

The flight of these birds, unlike that of the other woodpeckers, is steady and more like that of the crows and jays. The broad square wings and steady flight are good characteristics for field identification at a distance, but at close range a Lewis woodpecker can be mistaken for nothing else.

Nesting-holes of these birds are usually drilled high above the ground, often in isolated snags. In June they lay from five to nine dull white eggs which vary greatly in shape and size. At that time of year the Lewis woodpecker gives forth with a variety of subdued calls, low "chirring" noises and an occasional high-pitched "chee-up," but for the large part it is the most silent of our woodpeckers.

Other unwoodpecker-like attributes: It seldom climbs vertically up the trunks and branches of trees, and is rarely heard tapping. It sits with ease crossways on a branch and even upon telephone-wires. From the high isolated perches which it seems to prefer, the Lewis woodpecker is given to peculiar sailing flights of varying

Yellow-bellied sapsucker.
Male. Female.

distances and heights, returning almost invariably to the tree from which it took off.

Altogether this woodpecker is a most interesting bird; striking in appearance and strictly a non-conformist in behaviour, it is a bird most observers are delighted to record and study.

THE YELLOW-BELLIED SAPSUCKER

Sapsuckers are woodpeckers which have evolved along slightly different lines than have other birds of this kind. In general appearance and habit they have the basic woodpecker attributes. The feet, bill, stiff tail feathers, voice, and general woodpecker habits of drilling, tapping, and so on are all characteristics of these birds. They differ, however, in their feeding habits, for during the spring and summer when the sap flows freely in the cambium layer of trees, these sapsuckers subsist largely upon that fluid. They accomplish this by drilling a series of squarish holes in the bark and lapping up the sap as it oozes from the tree. While doing this they lean well back so that the contour feathers of the breast and belly are not gummed by the sticky liquid. While the tongue of grub-eating woodpeckers is very long and modified at the end in a series of barbs upon which the grubs are impaled and withdrawn, the tongue of the sapsucker is much shorter, and instead of having barbs it has a fine brush-like end which is apparently used in gathering up the sap. At one time it was thought that the sapsucker drilled the sap-oozing holes only to attract insects upon which it then fed. It is true that they do eat many insects which gather at the exuding sap, but the initial purpose in drilling is to obtain the sap and the cambium proper. In addition to sap and insects, the latter often captured on the wing, sapsuckers devour berries and other fruits when such are available.

In British Columbia we have two races of the yellow-bellied sapsucker. The eastern form, which occupies the wooded areas of Canada from the Rocky Mountains eastwards, has filtered into the Province through the Peace River parklands and is confined fairly well to the north central and east central sections, although there are records as far south and west as Vanderhoof. It is not plentiful in the northern extremities of the Province. The western

form, often called the red-naped sapsucker, occupies the remainder of the Province, apart from the Coast, being confined for the large part east of the Cascade Range. It occurs regularly in the recently burned over area west of Allison Pass on the Hope–Princeton Highway, but we have no records closer to the Coast than that point.

The eastern form is variegated above with black and white and has a decided yellow tinge to the belly plumage. This yellow is topped by a jet-black crescent-shaped breast band which curves up to the lower mandibles, forming a black border around the bright-red throat. The crown is red, back of the head and neck black, while parallel white markings run back from the eye and upper mandible. The female of this race has a white throat and sometimes lacks the red crown. Young of the year lack the red crown, red throat, and the black breast band, and the white areas are usually brownish in colour. The western form differs in having practically no yellow on the belly and has a red bar across the nape, and the female of this race has a red throat patch which the eastern bird never has. Both races carry white markings on the wings, which show plainly when the birds are in flight.

Yellow-bellied sapsuckers attack a great variety of trees, often utilizing the pitch of fir and pine, although there seems to be a preference for deciduous types, and when feeding on cambium the birds show a marked preference for aspen. In some areas they may cause considerable damage by girdling, thus destroying valuable fruit-trees.

Nesting-holes are drilled from 5 to 30 feet above the ground, usually in an aspen or cottonwood tree near water. From three to six round white eggs are laid in May, and by July the fledglings are " buzzing " in the nest. This peculiar buzzing noise made by the young birds can be heard at a considerable distance, making the nest of this species easy to find. In the fall the family groups migrate southwards to winter in the United States.

A good deal of confusion seems to exist in the recorded distribution of these sapsuckers, some authorities citing winter records for Comox, Barkley Sound, the Queen Charlotte Islands, and " South-western British Columbia." To our knowledge there is no

record for this species on Vancouver Island nor the Queen Charlotte Islands.

According to Bendire, the voice of this sapsucker is a " whining ' whaee ' " and it utters a number of other sounds, some of these resembling the calls of the blue jay. During the mating season, when the sexes are chasing each other, a series of notes like " hoih-hoih," a number of times repeated, are frequently heard. Like other woodpeckers, these birds have a series of minor calls and low-toned " tucks," " hits," and " tooks," which are useful to the bird-watcher for identification purposes. In addition, the yellow-bellied sapsucker's tapping is distinctive—four or five taps given in quick succession are followed by a short pause, then two quick taps and another pause followed by two more widely spaced taps—yet another pause, followed again by two still more widely spaced taps. This varies somewhat in number of taps but the cadence and volume are diagnostic, and most observers can readily identify the yellow-bellied sapsucker by ear with a little practice.

THE RED-BREASTED SAPSUCKER

The red-breasted sapsucker is sometimes mistaken for, and often called, the red-headed woodpecker. The red-head, however, is a bird of the East, occurring from the Atlantic seaboard westward only to the Rocky Mountains in Southern Alberta, where it is not numerous. The red-breasted sapsucker is an entirely different bird, even though the head and breast are red. The back is black, patterned with less white than on the yellow-bellied sapsucker, but the wings bear the white markings characteristic of all sapsuckers. The feathers on the belly are yellow, which leads perhaps to some confusion in the minds of beginners. In behaviour and feeding habits, too, this bird closely parallels the previously described yellow-belly, but the distribution is entirely different, as the red-breasted population is confined largely west of the Cascade Mountains. In the region of the Skeena River there is an eastward penetration as far as the Peace River parklands, and a certain amount of overlapping of yellow-bellied range also takes place in such areas as Manning Park. However, there are only two British Columbia records of possible intergradation

between these sapsuckers, and most workers feel that they deserve full specific standing.

These birds are resident on the Coast the year round, occurring on all of the wooded coastal islands, including Vancouver Island and the Queen Charlottes. They appear to fluctuate violently in

Red-breasted sapsucker.
Adult. Young.

numbers. For example, during the summers of 1946 and 1947 in the forests of the Queen Charlotte Islands, the red-breasted sapsucker was the most common bird, apart possibly from the red

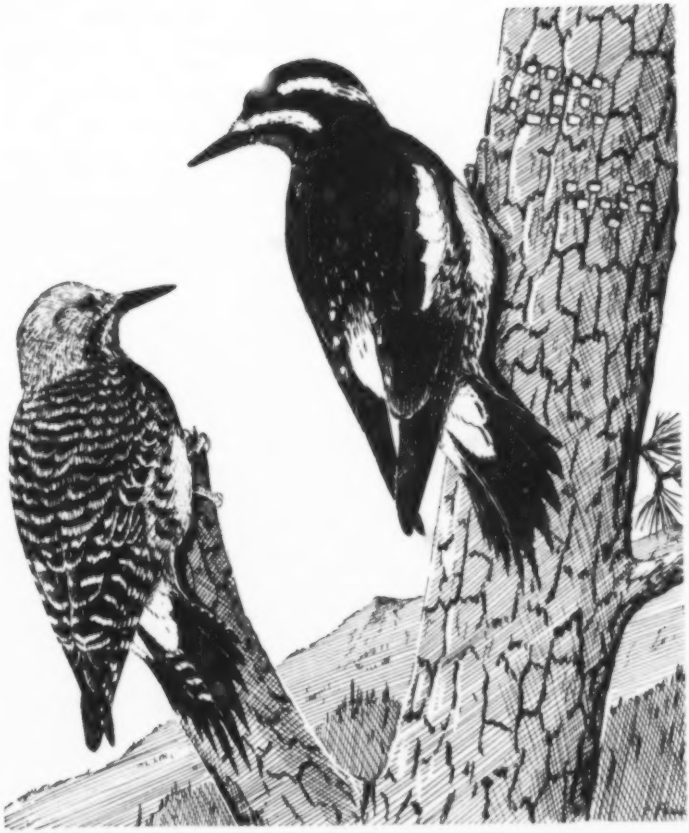
crossbill (another species subject to violent fluctuation). During the summer we observed these birds in great numbers, and occupied nesting-holes could be found in any section of the forest. This was true in every part of the islands visited, which, during the eight months there, included many camps from Langara Island, at the extreme north-west corner, to Rose Harbour, some 160 miles to the south, on Kunghit Island. In 1952 we returned to the Charlottes, and although the trees bore multitudinous scars of previous activity and the nesting-holes were still evident, we recorded not a single bird in the five weeks spent there. Similarly, on Goose Island in 1948 we were engaged in close ecological work on all species of birds and mammals occurring there. The trees on this group of islands bore evidence of a large population of sapsuckers, yet in four months of continual observation not a single specimen was recorded.

During the period 1948 to 1954 we have seen very few of these birds on Vancouver Island, although it forms a large part of their range. From the records, however, it is certain that they are here in numbers when the upward fluctuation occurs, and we have little doubt that most local bird-watchers have already observed this species or will do so in the future.

The adult birds are coloured alike (left), the gaudy red head and breast being unmistakable. The young (right), however, are lacking in this distinguishing characteristic, but the sapsucker attributes are there, and since to date no other species of sapsucker has been recorded in this region, the juveniles are easily recognized.

THE WILLIAMSON SAPSUCKER

This gaudy sapsucker is one of the most striking members of the woodpecker group. In the male the head, back, breast, wings, and tail are shining jet black. Two broad white stripes—one a moustache, the other circling the back of the head from eye to eye—stand out in clear-cut pattern, and yet somehow serve to break the outline of the bird when viewed at a distance. The white rump, wing patches, and flecking on the flight feathers blend with the barred grey and white feathers on the flank.



Williamson Sapsucker.

Female. Male.

The belly is bright yellow in colour, and to complete the picture a well-defined crimson patch is present on the throat. Thus the name "cut-throat" one often hears applied to this sapsucker.

The female could and has been mistaken for a species unto itself, for it is a drab-coloured bird bearing little colour resemblance to the male. It is essentially barred grey and brown over the back, flanks, and breast with a pale-yellow belly and a light-coloured brown head. In this respect the Williamson sapsucker differs from other woodpeckers in which the sexes are very much alike in plumage colour.

In British Columbia these beautiful birds are confined to the dry forests of ponderosa pine, larch, and fir at high elevations along the International Boundary. The westernmost record for the species was taken at Towers Ranch near the eastern boundary of Manning Park, but the centre of abundance appears to be in the Newgate area and around Anarchist Mountain, where the birds have been observed nesting.

The eggs are laid in holes almost invariably drilled in coniferous trees rotten at the core. The nest-holes vary from 5 to 60 feet off the ground, and from three to seven round white eggs are laid. Egg-laying begins in May; both parents take part in the incubation and feeding of young. The young are usually out of the nest in July foraging with the parents.

In most birds the juveniles resemble the adult female in plumage, but in this species the sexes differ at all ages, the only characteristic in common being the white rump.

The Williamson sapsucker is a "shy and suspicious bird" according to most observers. The voice is described as a "weak wheezy whang or whether" by Grinnell and Storer, and as a "number of rolling r's beginning with a gutteral k-k-r-r-r" by Cowes. Others have described it as reminiscent of the squeal of the red-tailed hawk, and some say it is similar to the call of other sapsuckers. (Bent, 1939.)

The tapping and drilling roll of this bird is said to be distinctive—a series of blows in irregular or broken rhythm.

Bailey reports that in seventeen stomachs examined, 87 per cent of the food was animal matter, almost all of which was made up of ants, and about 12 per cent was made up of cambium (soft

wood). This sapsucker, however, is known to feed largely upon sap during the spring and early summer, leaving evidence of its feeding activity in the characteristic series of square holes in the bark of pines, which it seems to prefer, although other kinds of trees are also utilized.

The Williamson sapsucker is a summer resident in British Columbia, moving southwards in the fall to winter in Southern California.

THE HAIRY AND DOWNY WOODPECKERS

The bird depicted in the centre of the illustration is a hairy woodpecker. It is about the size of a robin, black and white in colour; males have a bright-red nape spot which is lacking in females. The downy woodpeckers at the right are much smaller, but otherwise they closely resemble the larger bird. The light under-parts, white wing spotting, face markings, and the white-marked back are distinctive in both species and require little elaboration. White outer tail retrices more or less barred with black in the downies serve also in distinguishing the two species.

The hairy woodpecker is one of our most widely distributed birds. It occurs throughout the Province in all wooded areas from the Yukon boundary south to the border, and westwards throughout the coastal islands to the Queen Charlottes. These races are all readily identified as hairy woodpeckers, varying chiefly in the intensity of white on the breast and in the amount of spotting on the wings. Generally speaking, the birds of the eastern sections are startling white and black, while to the westwards the white darkens. For example, the bird on the Mainland Coast, commonly termed the Harris woodpecker, is characterized by a smoky-grey breast and back; that on the Queen Charlottes, commonly termed the Queen Charlotte Island woodpecker, is still darker with the light wing spotting and white areas on the back reduced; but in the Interior the Rocky Mountain hairy woodpecker is snowy white on the breast, with a full complement of white markings on wing and back.

The voice of the hairy woodpecker is described by Peterson as "a kingfisher-like rattle, run together more than the call of the

Hairy and downy woodpeckers.

downy woodpecker." Note, a sharp "pleek." Of course, if you are not familiar with the call of the kingfisher and of the downy woodpecker this will be of little use to you. Others describe the hairy woodpecker's call as "a shrill rattling note, triii, triii," and again "huip, huip," or a "sharp rather metallic chink or click"; still others say "the call is a loud 'keep.' During the mating season another call 'kweek kweek kweek kweek,' is heard," etc. Phonetics in describing bird calls seem most unsatisfactory. We suggest you go out, find yourself a hairy woodpecker, listen to the noises it makes, catalogue same in your mind, and perhaps another time you may be able to identify it specifically without seeing the bird.

Hairy woodpeckers are year-round residents in the Province, and as far as is known there is no large migratory movement. Like other woodpeckers, they nest in holes excavated in tree-trunks usually at a considerable height from the ground. Four or five round white eggs are laid in April or May. Young are usually out of the nest by June. The juveniles resemble the adult birds, but white areas are tinged with yellow, the bill is short, and sexes are usually alike. The most notable character in the juvenal plumage is the occurrence of red, pink, or, in some cases, yellow over the entire crown of some young birds.

The hairy woodpecker is a bird of the forests as a rule, seen to less extent in the towns than is the flicker and the downy.

Food of this species is 90 per cent insect, largely the larvæ of wood-boring beetles; the remaining 10 per cent is made up of small wild fruits and various seeds.

The downy woodpecker is a year-round resident in the southern portion of the Province. It occurs as far north as Atlin during the summer months, but very few records have been obtained in the north and little is known of its movements. Three races occur in British Columbia, differentiated in the north, south, and west principally by colour, all very similar in appearance and much like the hairy woodpecker in this respect.

Drilling and egg-laying begin in April and May; young are heard in the nest in June, and most of them are out in July. They nest from 8 to 50 feet above the ground, usually in a dead tree.

From three to six small round white eggs are laid. Young of the year, like the young hairy woodpeckers, have the yellow tinges and the red, pink, or yellow crown.

Food of this species is 76 per cent insect larvæ; the remaining 24 per cent is vegetable, i.e., small wild fruits and various seeds.

The downy woodpecker is not a noisy bird—the call note is a single abrupt syllable, like "tchick"; another call is "a long whinny made up of a dozen or more 'Tchicks.'" These increase in rapidity soon after the beginning of the series, and the pitch drops rather sharply. Near the close the volume diminishes, and the whinnying ends in a "dying fall."

The drumming habit of woodpeckers seems to be tied closely with breeding behaviour and is most often heard in the spring. The downy woodpecker gives a long unbroken subdued roll which is easily differentiated from the short, more widely spaced and loud tattoo of the hairy.

Downy woodpeckers frequent open woodlands and are quite at home in towns and cities where such occur. In Victoria these beautiful little birds frequent stands of Garry oak, apple-orchards, birch, and other deciduous types. During the winter months they come readily to feeding-trays for suet, and in the summer they nest throughout the city. Bird-watchers who have missed them just haven't been looking.

THE WHITE-HEADED WOODPECKER

The white-headed woodpecker has been recorded in British Columbia only three times—twice in the Okanagan (December and January) and once in the Similkameen (date unknown). Its normal range extends through the Cascade and Sierra Mountains from Washington to South Central California, eastwards to Idaho and Western Nevada. A southern race, somewhat isolated, occurs in the mountains of Southern California.

This is a high-country woodpecker, ranging in open pine and fir forest from an altitude of 4,000 to 9,000 feet during the spring and summer months. In the winter it moves lower down into the valleys, but otherwise shows no migratory tendencies. It nests in May and June at high altitudes, almost invariably in a dead pine,

White-headed woodpecker.
Male.

where it lays from four to seven round white eggs. Nesting-holes are drilled low down in trees which, while having a hard outer shell, are usually decayed and " punky " within, for this woodpecker is not an accomplished driller. The skull formation is much weaker than in other woodpeckers.

The feeding habit is creeper-like. Instead of drilling, these birds use the bill as a pry, lifting away small portions of bark and probing in cracks as they work steadily up the trunk. About 50 per cent of the white-head's diet is comprised of pine seeds; the remainder is made of ants, other insects, spiders, and the like.

The white-headed woodpecker is a quiet bird, and despite its startling white head and wing patches, red nape (males only), and the sharply contrasting black of the remaining plumage, it is difficult to see in its chosen habitat. These characteristics and the high altitudes at which it lives account in part for the fact that many people, even on the bird's geographical range, are unfamiliar with it.

The voice is described as a single " wick " or when excited the female calls " ' cheep-eep-eep-eep ' very fast and repeats the call every few seconds. The male under similar circumstances calls ' yip, yip, yip, yip ' in a much shriller tone, but in slower time."

This woodpecker can be mistaken for no other bird; young resemble the adults, but are dull in colour and have shorter bills. Young males and females sometimes have reddish markings on the head as does the adult male, and in those young birds this is often more extensive than in the adult.

If you wish to search for this bird in British Columbia, strike for the high ponderosa pine forests in the Southern Interior; with luck you may add it to your list.

THE AMERICAN AND ARCTIC THREE-TOED WOODPECKERS

The two species of three-toed woodpeckers occurring in the Province are similar in size and appearance. Both are about 9 inches long with heavily barred black and white sides, white outer tail feathers, white moustache, and short white line behind the eye. The under-parts are white throughout, and males of both

American and Arctic three-toed woodpeckers.

Male. Female.
Female. Male.

species have a yellow crown patch. The American three-toe (left) has a barred black and white back, while the Arctic three-toe (right) is solid black on the back; this characteristic is easily seen at a distance and is used in field identification. As the name implies, these woodpeckers have only three toes—two pointing forward, one back—a feature most difficult to see in the field. The heavily barred sides in both species will serve to distinguish three-toes from the hairy woodpecker, with which they are most likely to be confused. Young hairy woodpeckers sometimes have a yellowish patch over the head and are often mistaken for male three-toes; absence of the barred sides in the hairy, however, serves to distinguish this species.

The American three-toed woodpecker is resident throughout the Mainland of the Province, occurring in the sub-alpine and boreal forest areas for the large part. There are a few records for Vancouver Island where evidence of nesting has been secured near Comox and on the Forbidden Plateau. Several nesting-holes have been found in the " Pinewoods " area in Manning Park, and most of them there were close to the ground in pine-trees. Reports from elsewhere indicate that pines are almost invariably used, and that the nesting-holes range from 4 to 40 feet above the ground. Four round white eggs are laid in May, hatching after an incubation period of about fourteen days. Juvenile birds resemble the adult male, both sexes having reduced yellow patches or a scattering of yellow feathers on the head.

These birds feed primarily upon the larvæ of wood-boring beetles, though ants and other insects are also utilized. Only 12 per cent of their food is made up of vegetable matter, such as small fruits and cambium. During feeding activity, three-toes often scale large patches from the trunks of dead coniferous trees, a sure sign that they are in the area where such workings are observed.

The voice is single " chuck " and sometimes a rattling call reminiscent of the hairy woodpecker but somewhat subdued. Drumming is characteristic, lasting from two to three seconds, the first four or five pecks slower than the following tattoo. During the winter months the three-toed woodpeckers are largely silent,

the voice and drumming becoming more apparent as spring approaches.

The Arctic three-toed woodpecker is resident throughout the Province east of the Cascade Range, occurring in sub-alpine and Columbian forest in the southern portions and in boreal forest northwards through Alaska. There are as yet no records for this black-backed bird on Vancouver Island.

In feeding habit, nesting behaviour, and call, the Arctic three-toed closely parallels the preceding species.

The Crows and Their Allies

INTRODUCTION

The crow family in British Columbia is made up of seven species of birds—the raven, two crows, two jays, the nutcracker, and the magpie. In other parts of the world there are many species included in the family that are even more diverse in appearance than are those occurring here. It may puzzle the beginner that all should be included in the same family even though they are subdivided into smaller groups within that family. The beginner has little difficulty in recognizing the diminutive pygmy owl as a member of the owl family and has no trouble recognizing the tiny downy as a relative of the pileated woodpecker, but it is hard to visualize the dainty Canada jay and the huge raven as cousins. Nevertheless, the characteristics which have led ornithologists to group these diverse appearing birds into one family, the Corvidæ, are very real.

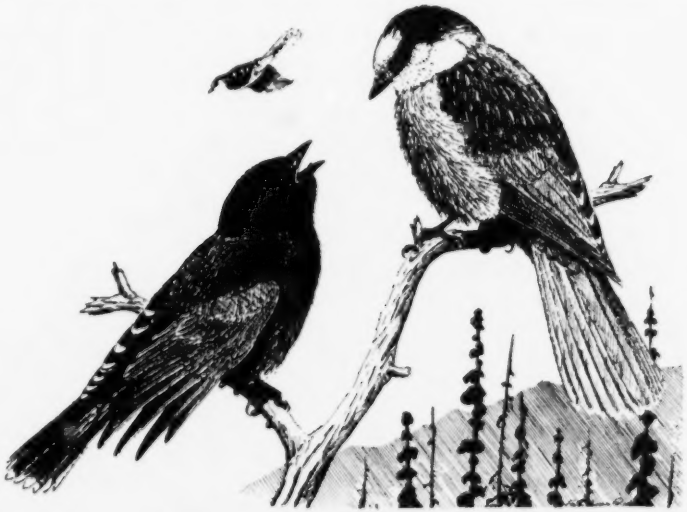
The most easily seen of these characteristics are in the bill. It is relatively long, stout, and decidedly arched on the upper margin, and at the base are dense tufts of stiff bristles which cover the nostrils. Some other families of birds also have these rictal bristles, as they are termed, but all are much smaller birds. In addition, voice, behaviour, nesting habit, and other characteristics less easily seen are so similar in many respects that there is little doubt that the ravens, crows, jays, and magpies are very closely related.

The species that make up this family in British Columbia are easily separated one from the other. The jays have differentiated into several different subspecies, but all are readily recognized for what they are. Both Canada and Steller jays of the coastal slopes are slightly different to those from the dry Interior, which, again, are slightly different to those of certain other parts of the Province. Yet they are all sufficiently similar that bird-watchers need not

concern themselves too much with trying to differentiate the various subspecies. To those interested in speciation, however, these subspecies present an intriguing source of study.

THE CANADA JAY

All wilderness travellers are familiar with this inquisitive bird, which is known by a great variety of names—whisky-jack, camp robber, grey jay, Oregon jay, and so on. These names apply, in



Young. Canada jay. Adult.

some instances, to various subspecies, for no less than five are known to occur within the political boundaries of British Columbia. In behaviour and appearance they are all very much alike, and although noticeable differences exist in plumage colour, the Canada jay can be mistaken for no other bird. Adults (right and flying) are larger than a robin, measuring some 13 inches in total length; the general colour is grey, including the tail and wings;

the back of the head is dark with a streak of dark plumage extending forward through the eye; crown and cheeks are white, subspecific differences being manifest in the intensity of the grey plumage. Juvenile birds (left) are a very dark grey. They are usually accompanied by the adults when in this plumage, which enables them to be easily identified.

These birds live at high elevations in most coniferous areas of the Province. They do not occur on the Queen Charlotte Islands or in the dry forests of the Southern Interior, and they are absent also from most of the low-lying coastal islets. However, we do find the Canada jay on Saltspring Island and on Vancouver Island. On the latter they are often seen in the Sooke hills, on the Goldstream watershed, along the high points of the Malahat, and throughout the high country to the north.

The whisky-jack, as most people like to call it, has what approaches to an almost complete fearlessness of man, and there are countless records of these inquisitive birds joining the camper at his meals, often perching within arm's length and eating whatever scraps are offered. It is not uncommon, when dressing out a deer, to have them perched on the carcass as you work, and on many occasions they have been known to use the hunter as a perch while looking over the situation. They afford bright and engaging companionship in the lonesome woods where their innate curiosity leads them to investigate any unusual sounds. In areas where they occur, a rifle shot, the chopping of wood, and other noises emanating from outdoor activity will almost invariably draw them to the source of noise, and from then on they seem to attach themselves as if knowing that here is a source of unusual food-supply. They eat anything, it seems, from scraps of bread and meat to soap and tobacco. In the wilds they are omnivorous, eating carrion, insects, berries, and other wild fruits as the season provides. During "tough" winters they descend from the frozen heights to forage in the valleys, but otherwise appear to be non-migratory, although there are a few records of periodical large movements in other parts of the country.

The whisky-jack nests in the high coniferous forests during March and April, often in sub-zero weather when there is still 15 or 20 feet of snow. They build an elaborate nest thickly lined

with feathers, shredded mosses, and lichens, in which from two to five finely speckled buffy-olive eggs are laid. Only the female takes part in incubation and brooding, the male providing food for both female and young, for should she leave the nest for any length of time freezing would destroy the young. When the young are feathered, both parents forage and feed, the thick feather lining of the nest then protecting the nestlings against the biting cold.

Nests are usually well concealed in a coniferous tree, and situated as a rule where a branch joins the bole. Nests range in height from 4 to 50 feet above the ground, but are found more frequently from 8 to 12 feet. The birds are meticulous in the nest area; droppings, bits of nest material, and other evidence are carried well away from the site. This, coupled with the silence maintained by both young and adults during the nesting period, probably explains why comparatively few nests of this species have been located.

Whisky-jacks are "sailers," seldom flying conventionally through the forest, though perfectly capable of doing so. Scaling off from a high point, they sail silently to a lower perch, then hop upward from limb to limb until sufficient height is gained to sail again. In this manner they follow trappers and other woodland workers, and although their company is cherished by some, there are many who heartily condemn the whisky-jack. The unattended camp will be thoroughly worked over, and any food left uncovered is invariably eaten by these birds or cached away for winter use. Trappers, too, lament this jay's habit of stealing baits and pecking holes in the carcasses of trapped fur-bearers.

Like other members of this family (Corvidæ), the whisky-jack is a mimic, capable of uttering a great variety of calls. It imitates the call of the pygmy owl, the scream of the red-tailed hawk, and the notes of many smaller song-birds. The conventional note is a querulous "quee-ah," which it usually utters from the top of a tree while first looking over the intruder. During courtship the male gives forth with a subdued murmuring song, said to be quite pleasing to the ear, although most observers have yet to hear it. When in whisky-jack country, any unfamiliar bird noise can usually be attributed to this jay. Where Steller's jay also occurs, however, the situation becomes complex, for both imitate each other and

each other's imitations, and unless one is aware of this it is likely a very confused bird-watcher will come out of the woods.

THE STELLER JAY

The Steller jay is a crested bird about 14 inches long with head, upper breast, back, and primaries black, and the remainder of the plumage generally blue in colour. The feathers of the wing and tail are marked with transverse black bars, while light-blue stripes on the forehead complete the picture of a striking and handsome bird.

Like most crows and jays, this bird is a versatile creature, adapting easily to a great number of different habitats. As a rule, however, it seems to prefer the coniferous-forest edge, around slashes, rivers, and shore-lines from sea-coast to timber-line throughout the Province. It sometimes invades towns and cities where sufficient cover is present. In 1953, for example, there was a considerable influx into the City of Victoria, with many reports coming in to the Museum office.

The population of Steller jays seems to fluctuate over long periods of time, disappearing almost entirely from areas where once the birds were very numerous. This phenomenon, apparently is not due to migration as the species is sedentary, living the year round in even the coldest areas of the Province. At the present time they seem to be increasing on Vancouver Island; several individuals were seen on almost every trip into the forests during the past four years.

These birds nest from 8 to 40 feet above the ground, usually in small firs, where a bulky nest of branches, twigs, and mud is constructed. This structure is lined with fine rootlets and from three to five pale-greenish, sometimes faintly speckled, eggs are laid in April and early May.

In June and July family groups may be seen foraging along the forest edge where they are easily "called" or "squeaked" into close range.

Like other jays, this bird is a great mimic and has a variety of calls that are very difficult to describe. Here is a sample of some phonetics—"kirk-kirk, kirk-perk, perk-er, perk-er" or wheezy

Blue jay.

Steller jay.

magpie-like notes such as "ca-phee, ca-phee, pheeze-ca pheeze-ca." If you know this bird, you may get something out of these words; but if you've never heard it, all the phonetics in the world will not convey the sounds to you. The Steller jay also calls like the red-tailed hawk and has a low, murmuring, distinctive but seldom-heard song, as does the Canada jay.

Food consists of "everything going"—all manner of small fruits in season, grains, nuts, insects, and carrion when such is available. Bold and inquisitive to a lesser degree than the Canada jay, this bird is nevertheless an oft-times nuisance to trappers, campers, and hunters. It robs camps of food, destroys fur, and often follows along with the hunter, raising such a chatter as to make the pursuit of game a dead loss. Others welcome the company of these perky jays and derive a great deal of pleasure in observing their antics and listening to their bright chatter.

The Steller jay is often erroneously called the blue jay, but the blue jay is a bird of the East and so far has not been recorded in British Columbia. (*See* cut.)

THE MAGPIE

Little description is needed here for the magpie. The startling black and white plumage, very long tail, rounded wings, and the characteristic "ca-ca-ca-ca" notes of the call are unmistakable. At close range an iridescence sometimes shows on the black plumage of the tail and back, but in the field this characteristic is seldom seen.

The magpie is resident throughout the Interior of the Province from the United States border to Alaska, with a centre of abundance in the south (Osoyoos, the Okanagan, Kamloops). Although confined pretty well to the eastern side of the Cascades, occasional sight records have been made on the Coast and coastal islands, usually in the fall.

We have as yet no record for Vancouver Island, but it would be of little surprise if this bird should be taken here in the wild state. Several captive birds have been brought to the Island, but apparently all have succumbed to cats, guns, or some other decimating factor, and to our knowledge there are none at large now.

Magpie.

Magpies frequent a semi-open habitat where plains are interspersed with thickets. They keep pretty well to the immediate vicinity of the cover, often feeding on the ground around the edges and taking to the bushes when disturbed. They appear to be poor flyers and seldom maintain long flights, but glide from limb to limb and literally sneak through the foliage, where, despite the gaudy plumage, they are often amazingly difficult to see. Magpies are inquisitive birds but lack the boldness of the jays, and they beat a hasty retreat at the first sign of danger.

The nest is a bulky structure built of branches and twigs, lined with coarse grasses and rootlets. It is almost invariably roofed

over, the birds entering through a hole in the side. These nests are usually built in low thickets, very often in wooded ravines; from six to eleven eggs are laid in early April.

Large fledglings are usually found in the nests during May, and when taken at this time they make unusual and entertaining pets. Easily kept and fed, capable of a degree of mimicry in human sounds, they have provided entertainment for many youngsters throughout their range.

The magpie is considered a villain by many sportsmen, poultrymen, and ranchers, for during its nesting season it subsists largely upon the eggs and young of other birds. This nest-robbing trait is characteristic of the Corvidæ (crow family) and has led man to organize " shoots " and competitions with the idea of " exterminating " magpies and crows from certain areas. Despite this persecution, the magpie and the crow still flourish throughout their normal range.

While it is true that these birds do, on occasion, reduce populations of song and game birds through nest predation, it is equally true that as early nesters they often have a most beneficial effect in staggering the nesting periods of these desirable birds. When magpies destroy a clutch of eggs in the early stages of incubation, the nesting pair almost invariably produce a second clutch which hatches later. The young, coming off later in the season, very often survive when early nestlings are killed off by inclement weather conditions, floods, and the like.

Nest-robbing by crows and magpies ceases, for the most part, after they have completed their own nesting, and consequently second clutches of the later-nesting " beneficial birds " are not affected by their predations.

The magpie is a versatile feeder. Berries, insects, carrion, and even grain during the winter months all form part of the diet. Ranchers detest the magpie because it is said to cause serious damage and sometimes death to live stock by pecking and feeding on open wounds or sores. For some reason the animal affected does not seem to be aware that it is being eaten alive. It would seem that any animal tolerating such treatment must be in a state of debility, such that the magpie's efforts are merely contributing

factors. Magpies are often seen perched on domestic and sometimes on wild stock, obviously searching for parasites, such as the larvæ of warble-flies. It may be that the habit of devouring living flesh followed naturally from this activity.

At any rate, this handsome bird is part of our fauna, and, whether we like it or not, it appears that the magpie will remain as part of our out-of-doors despite man's activity against him. It is perhaps significant that the efforts of the man with the gun are more than nullified by the efforts of the land-clearer, whose activities actually increase the magpie's range, and thus the land produces more of these birds.

THE RAVEN

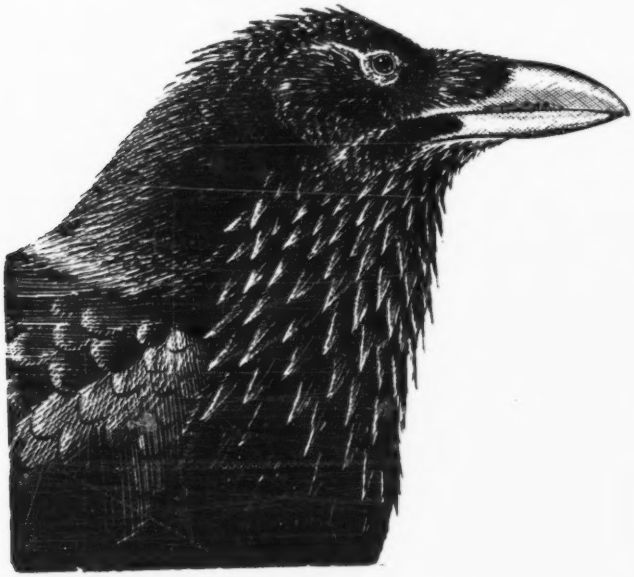
Ravens are distributed throughout the Northern Hemisphere from the barren lands of the Arctic regions to the Equator, occurring wherever suitable habitat is found. In the southern portions of the range they are most often found in the high mountains where trees or cliffs afford good nesting-sites. To the north we find them much more abundant and living at sea-level as well as at higher elevations.

The raven has apparently disappeared from much of its range in the United States, and many writers have attributed this to an intolerance of man. However, on the British Columbia Coast, ravens invade towns and settlements and are often seen perched on poles and fences, quite unconcerned by the passing human parade. In fact, it seems that these urban ravens have recognized "a soft touch" around the habitation of man and are taking full advantage of the easy living.

The wilderness areas above the tree-line and along remote stretches of coast-line are also favourite haunts of these birds, and we see them foraging by day in those areas. On the Queen Charlotte Islands ravens are plentiful along the shores and over the interior muskegs where they often fly and perch on the stunted trees, to devour the shell-fish and other marine forms which they have secured at low tide. Like the crow, the raven is omnivorous, eating carrion, birds' eggs, fledglings, insects, fruit, frogs, and, in fact, whatever nature presents.

The raven is non-migratory, staying with us during the winter months. There is said to be a movement down from the high country and extreme northern areas, when the deep snows and cold force the birds to search elsewhere for food, but even in such areas as Northern Greenland a few ravens remain the year round.

The nest of these birds is a large coarse structure of interwoven sticks, the bowl lined with coarse grasses, rootlets, deer hair, wool,



Raven.

felt, or whatever lining material happens to be handy. In the northern sections the nests are usually built from 70 to 100 feet above ground in large limbless trees with good cover at the top. In southern regions the raven seems to prefer cliffs for nesting purposes, where they build the nest under an overhanging rock or ledge, and always, we are told, in the shade.

These birds nest early; laying in April and May, they often have young flying by the first of June. From two to eight young are raised, the usual number being four. These family groups remain together throughout the fall and winter, often banding up to form sizeable flocks.

Ravens are admirable fliers and their courting antics in the early spring are real aerobatic displays. They do full barrel rolls, hang motionless, tumble, dive, turn, twist, and spiral with a symmetry of motion that is a delight to watch. While in this flight they emit deep-toned notes that may be expressed as a musical "crrooouk." These notes are only one of a great variety of noises that ravens make. Here is an example set down by Soper in Bent (1946): "The raven at any time may utter a strange call like 'thung-thung-thung,' which bears a remarkable resemblance to the mellow twang of a tuning fork, being like it, rich, full, vibrant and musical. Another expression has a metallic, liquid-like quality after the style of the red-winged blackbird though greatly magnified in volume. The ravens possess a great range of notes, from their customary melancholy croaks, through numerous performances in striking imitation of other birds such as geese and gulls."

One of the most remarkable noises the ravens make resembles that of a cork being popped from a bottle and a subsequent gurgling sound as if liquid is being poured into a glass. The raven does not caw like the crow, but has a croaking call which serves to identify these birds.

The accompanying chart shows the basic differences in size and shape of our crows and the raven. At the top is the northwestern crow—noticeably smaller with more or less rounded wings. In the centre, the larger western crow, with more pointed wings, while at the bottom the raven appears much larger, has pointed wings, with the primaries more widely spread in flight. The raven's tail is longer and noticeably rounded as compared to the crow's. The heavy bill and the lanceolate feathers on the throat are features lacking in the crow. These characters, together with a wing-spread averaging 4 feet, should make them easy to recognize.

Ravens are not uncommon throughout the Province; there is little doubt that most bird-watchers have seen them at some time or other.

Flight silhouettes of northwestern crow, western crow, and raven. Note the small beak and round wing of the northwestern crow, and the very large beak and somewhat pointed wing and tail of the raven.

THE CROWS

Everyone can identify the crow; many call him a black scoundrel, many are entertained by his antics, but all who know him well respect his sagacity and capacity for survival. Open season the year round has little effect upon his numbers. Concentrated drives by sportsmen's groups and others upon his person, his nest, and his young seem only to smarten Mr. Crow still more, and he goes on his way with that well-known cocky and unperturbed air.

On the Coast we have a small, rather shrill-voiced bird known as the northwestern crow, and in the Interior a larger species with a deeper voice which is called the western or American crow. These are full species, and, as far as is known, they do not interbreed where their ranges meet in the upper reaches of the coastal valleys. The larger western crow is noticeably more wary than his coastal relative, but otherwise the birds are very similar in habit and behaviour.

Both are avid nest-robbers during their breeding season, and there is little doubt that they have a very real effect upon nesting populations of other birds. We have watched them rob the noble peregrine's nest and that of the lowly cormorant, and we have seen them remove eggs of the pheasant and of the sparrow. The size of the egg and of the defending parent seems to matter little, but the manner of robbing indicates that the crow is capable of something akin to reasoning.

For example, when robbing cormorants, the crow is very bold. In 1947, on the Queen Charlotte Islands, we had a large colony of breeding pelagic cormorants under observation. These cliff-nesters had built about 800 nests in a gorge at the north end of Langara Island, but at the time of our visit not a single egg was to be seen, although many of the cormorants appeared to be laying. Around the edge of the cliffs innumerable crows were perched, just watching—so one day we just watched, too. After a short while there was a sudden down surge of crows, all headed for a single cormorant's nest; the bird sitting thereon flushed, and one of the more nimble crows had the newly laid egg in a twinkling. The rest rejoined the " waiters " on the cliff edge, and in a few moments the performance was repeated. Those crows were taking every egg

laid in that colony, as it was laid. We returned two weeks later and found the cormorants had moved to another gorge a few hundred yards along the coast. In every nest was a clutch of eggs. The crows had ceased their predations and were then working the beaches; their only apparent effect upon the cormorants' nesting was to delay the time of hatching.

The same year we located a falcon's nest with four eggs, about half-way down from the lip of a 300-foot cliff on Cox Island. We were very anxious to secure this clutch of eggs, but our ropes weren't long enough to reach the bottom of the cliff. In order to get the clutch, we had to descend and return to the top, and neither of us felt the effort was worth the pitch, if more easily accessible

Northwestern crow.

nests could be found. So we kept this nest under observation while searching for others. One day there were only three eggs left, the next day only two. We had seen crows around, and though they stayed clear of the aerie, we suspected our black friends. The falcons, both male and female, would take off after petrels which we released after collecting the egg from their underground burrows. On one occasion, instead of watching the pursuit and kill, we kept our eyes on the unattended nest, and saw a crow hop out of some near-by cover, size up the position of

the busy falcons, fly up, and deftly " snitch " one of the remaining eggs. When the falcons returned the female settled down to brood over the nest, apparently unaware that only one egg remained. The next day it, too, was gone. However, the falcons renested at another location on the same cliff face and successfully raised three young that season.

Both species of crows nest in April and May. They build a conventional type of nest of coarse twigs and branches. We have found nests on the ground, on fallen logs, in recesses in rock, and in a variety of unlikely spots, but usually these birds nest from 20 to 50 feet up, most often in deciduous thickets.

Crows eat " everything going "—fruit, eggs, fledglings, carrion, and all manner of both fresh-water and coastal shore life such as frogs, snails, crabs, and whatever else old Mother Nature or opportunity provides.

We find these versatile and adaptive birds tormenting cats on our city lawns and badgering owls and other raptores in the wilderness. Busybody and scoundrel though he is, our out-of-doors would be lacking in something should he disappear. We preach not against destroying crows, for, as we have said before, despite the continual blasting of rookeries by dynamite, the continual crow shoots, and the annual destruction of nests by farmers, sportsmen, small boys and big boys, there are still as many crows, or more than there ever were.

THE CLARK NUTCRACKER

The Clark nutcracker, or Clark crow as it is sometimes called, is a chunky bird about 13 inches long. It has a smoky-grey body, pale-grey head, black wings with a large white patch on the secondaries; the outer tail feathers are white and the central ones are black. In general appearance, flight characteristics, and sometimes in feeding habit, these birds resemble the woodpeckers. An undulating flight and the habit of clinging vertically to a tree-trunk while hammering in search of grubs are distinctly woodpecker-like traits. However, nutcrackers are of the crow family; the raucous voice, nest-robbing habit, innate curiosity, structure, and general behaviour leave little doubt of this.

In British Columbia, Clark nutcrackers are resident in the high country the year round. During the winter and spring they sometimes forage in the valley-bottoms, but as a rule one has to climb to the sub-alpine forests to see them. The centre of abundance is in the south central and eastern part of the Province, but they have also been recorded on the Coast. We have records

Clark nutcracker.

from the Queen Charlotte Islands and from Vancouver Island at Duncan, Comox, and Chemainus during the winter months. There are summer records from the Forbidden Plateau, which indicate that a few are probably resident in the high country on Vancouver

Island. The population appears to thin out in northern parts of the Province, with casual occurrences in the boreal forest areas.

The Clark nutcracker nests early, usually in high pine forests, where it builds a bulky structure of sticks in the low branches of a tree. From two to six (usually two or three) eggs are laid in March; full-grown young are often seen foraging with the parents in June. As the higher ground is often covered with deep snow when the eggs of these birds are being incubated, it is not surprising that few people have ever seen an occupied nest.

Around the nest Clark nutcrackers are usually silent, but at other times they are very noisy creatures. They possess a harsh grating voice of considerable volume. The usual call has been variously described as a guttural "chaar, char-r-r, chur-r-r, kra-a-a, or kar-r-r-ack, each note repeated two or three times." Like other members of the crow family, however, they are capable of a variety of noises, some of them said to be not unmusical.

Food consists of a great variety, ranging through seeds of the nut-bearing pines (the staple diet) to insects, fledgling birds, eggs, grubs, and fruit in season, and even newly sprouted wheat. They visit winter camps, much as the whisky-jack does, and, like those birds, they eat whatever is available.

When flying from tree to tree, Clark nutcrackers have an undulating flight, but when on the move they use a powerful, rapid, and straightforward wing beat. Individuals sometimes soar high in the air like hawks and hurtle earthwards on partially closed wing, stopping suddenly just short of the ground with an explosive spreading of the wings. At other times they sit on a high perch and watch for passing insects, taking off and giving chase in erratic flight when the prey comes by.

It is said that these birds are sometimes mistaken for shrikes, but the striking differences in size (much larger), in behaviour, colour pattern, and structure should prevent such a mistake. If you are travelling in the Interior and wish to see these birds, visit the pine forests at higher altitudes and you will almost surely be rewarded.

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